**CP Geometry Common Assessment 6 Review**

# QUADRILATERALS

1) Some parallelograms do **not** have

a) opposite sides congruent b) congruent diagonals

c) opposite angles congruent d) diagonals that bisect each other

2) Some rectangles do **not** have

a) four right angles b) congruent diagonals

c) four congruent sides d) diagonals that bisect each other

3) Some rhombi do **not** have

a) opposite angles congruent b) supplementary consecutive angles

c) four congruent angles d) four congruent sides

4) In an isosceles trapezoid, the legs are

a) parallel segments b) congruent segments

c) perpendicular segments d) bisector of each other

5) Chose the statements that **must** be true for a rectangle.

I. The diagonals are congruent III. The diagonals are perpendicular

II. The diagonals bisect each other. IV. The diagonals bisect the angles.

a) I and II b) I and III c) I and IV d) II and IV e) I, II and IV

6) Chose the statements that **must** be true for a rhombus.

I. The diagonals are congruent III. The diagonals are perpendicular

II. The diagonals bisect each other. IV. The diagonals bisect the angles.

a) I, II and III b) II, III and IV c) I, II and IV d) I, III and IV

e) none of these

7) Which of the following methods can be used to prove a quadrilateral is a parallelogram?

I. Show that both pairs of opposite angles are congruent.

II. Show that the diagonals are perpendicular

III. Show that both pairs of opposite sides are congruent.

IV. Show that the diagonals bisect each other.

a) I, II and IV b) I, III and IV c) II, III and IV d) III and IV

e) all of these

8) If the lengths of the bases of a trapezoid are 19 and 33, then the length of the median is \_\_?\_\_.

a) 52 b) 14 c) 26 d) 21 e) None of these.

9) In parallelogram ABCD, if , then \_\_\_\_\_\_\_\_\_.

a)58 b) 32 c) 90 d) 122 e) None of these.

10) Find the value of x, y, and z (in that order) for the given parallelogram.

4y

3x-18

3z

2x+12

a) 30, 27, 36 b) 6, 27, 36 c) 30, 28, 36 d) 30, 27, 38

## INDIRECT PROOF

11) If you interchange the hypothesis and the conclusion of a conditional, the result is called the \_\_?\_\_ of the original conditional.

a) contrapositive b) inverse c) converse d) counterexample

## SIMILAR POLYGONS

12) If two polygons are similar then which of the following must be true?

I. The corresponding sides are in proportion

II. The perimeters are equal.

III. The corresponding sides are congruent.

IV. The corresponding angles are congruent.

a) I and II b) I and IV c) II and III d) III and IV e) IV only

13) If the corresponding angles of two polygons are congruent, then the polygons are \_\_?\_\_ similar.

a) always b) sometimes c) never

14) If r : s = 3 : 7, then r : 3 = \_\_?\_\_

a) s : 7 b) 7 : s c) r : 7 d) s : 3 e) 7 : 3

15) The ratio of the measures of two supplementary angles is 1:3. Find the measure of the angles.

a) 45, 135 b) 30, 90 c) 22.5, 67.5 d) 35, 145 e) None of these



For questions 16-19, use the diagram to complete the problems. Quad BCDE is similar to Quad. WXYZ. 

1. Find the scale factor of BCDE to WXYZ

a) 3 to 2 b) 1 to 1 c) 1 to 2 d) 2 to 3

1. Find the length of segment XY.

a) 3 b) 2 c) 4.5 d) 6

1. Find .

a) 63 b) 45 c) 117 d) cannot be determined

1. Find the perimeter of Quad WXYZ.

a) 24 b) 23 c) 16 d) None of these

20) If , QR = 9, RS = 12, QS = 14 AND YZ = 18, then the scale factor of  to is \_\_?\_\_

a) 1 : 2 b) 2 : 3 c) 7 : 9 d) 3 : 4 e) none of these

## PROPORTIONAL LENGTHS



21) If CE = 12, then BD = \_\_?\_\_

a) 4 b) 8

c) 6 d) 9

22) If BD = 8, then DE = \_\_?\_\_

a) 12 b) 16

c) 14 d) 18

23) Use the diagram below to find FG.



a) 3 d) 44

b) 6 e) 7

c) 22

J

8

24) Use the diagram and given information to find JN.

K

12

10

M

a) 9.6 b) 21.6 c) 12 d) 10 e) 3.6

N

L

## RIGHT TRIANGLES

25) Find the geometric mean between  and .

a) 5 b)  c)  d) 

26) The lengths of the legs of a right triangle are 5 and 12. Find the length of the hypotenuse.

a) 17 b) 15 c) 13 d)  e) None of these

27) One leg of a right triangle has length . The hypotenuse has length . Find the length of the other leg,

a) 2 b)  c) 5 d)  e) None of these

Use the given diagram to answer problems 28-33



28) If AB = 6 and BC = 8, then AC = \_\_?\_\_

a) 9 b) 10

c)  d) 

29) If AB = 12 and AD = 6, then DC =

a) 3 b) 18 c) 24 d) 30

30) If AD = 3 and DC = 6, then AB = \_\_\_\_\_\_

a)  b) 4.5 c)  d) 

31) If  = 60 and AB = 5, then BC = \_\_?\_\_

a)  b)  c) 10 d) 5

32) If  and BC = 8, then BD = \_\_?\_\_

a) 8 b) 16 c)  d) 4

33) If and DC = , then AB= \_\_\_\_\_.

a) 36 b)  c)  d) 

34) A triangle with sides of lengths 8, 9, and 12 is a(n) \_\_?\_\_ triangle.

a) acute b) right c) obtuse d) equiangular



## TRIGONOMETRY

Use the given diagram to express the trip function as a ratio.

35) In , tan B = \_\_?\_\_

a)  b)  c)  d) 

36) In , sin A = \_\_?\_\_

a)  b)  c)  d) 

37) In , cos B = \_\_?\_\_

a)  b)  c)  d) 

38) At 2 P.M. the shadow of a lighthouse is 22 feet long and the angle of elevation is 72 degrees. Find the height of the lighthouse.

a) 25 feet b) about 7 feet

c) about 21 feet d) about 68 feet

39) A tree stands in the shadow of a flagpole as shown below. The ends of the shadows of the pole and the tree coincide. The pole’s shadow is 7.2 meters long and the tree’s shadow is 2.7 meters log. If the tree is 1.8 meters tall, find the height of the pole.



a) 3 meters b) 6.3 meters

c) 4.8 meters d) 6.75 meters

## CIRCLES

40) A segment whose endpoints are points of a circle must be a \_\_?\_\_ and can be a \_\_?\_\_.

a) chord, secant b) diameter, radius c) secant, chord d) chord, diameter



Use the diagram to answer problems 41 – 45.

41) In circle P, if , then = \_\_?\_\_

a) 65 b) 115 c) 135

d) 130 e) none of these

42) Which of the following is NOT a radius?

a)  b)  c)  d)  e) all are radii.

43) Which one of the following represents a chord?

a)  b)  c)  d)  e) None of these

44) Which one of the following represents a tangent?

a)  b)  c)  d)  e) None of these

45) In circle P, which of the following segments must be congruent?

I.  II. 

III.  IV. 

a) II and IV b) III and IV c) I, II, and III d) II, III, and IV e) all of these

In questions 46 – 50, O is the center of the circle,  = 100,  = 30 and   
 = 80



46)  = \_\_?\_\_

a) 20 b) 30 c) 40

d) 50 e) none of these

47)  = \_\_?\_\_

a) 90 b) 130 c) 65 d) 60 e) none of these

48)  = \_\_?\_\_

a) 60 b) 65 c) 70 d) 90 e) none of these

49) If AF = 10, FD = 3, and CF = 5, then EF = \_\_\_\_\_.

a) 26 b) 11 c) 15 d) 6 e) None of these

50) If GC = 12, GB = 4, and GA = 3, then GD = \_\_\_\_\_\_.

a)  b)  c) 16 d) 9 e) None of these

51) If an equilateral triangle ABC is inscribed in a circle, what is the measure of ?

a) 90 b) 120 c) 60 d) 180 e) None of these.

52) In a circle with radius 10 inches, a chord is drawn 6 inches from the center. How long is the chord?

a) 8 in. b) 24 in. c) 16in. d) 12in e) None of these.

## PERIMETER AND AREA

53) The area of a circle with radius 10 is \_\_?\_\_

a) 100 b) 200 c) 20 d) 40 e) None of these

54) The circumference of a circle with diameter 7.

a) 49π b) 14 c) 3.5π d) 7п e) None of these

55) The area of a trapezoid with height 10 and bases 9 and 13 is \_\_?\_\_

a) 55 b) 220 c) 110 d) 27½ e) None of these

56) A square is inscribed in a circle of radius 10. What is the area of the square?

a) 100 b) 200 c) 400 d)  e) none of these

57) One side of a rectangle has length 12 and the rectangle has area 60. What is its

perimeter of the rectangle?

a) 17 b) 30 c) 34 d) 35 e) none of these

58) A square has a diagonal with length . What is the area of the square?

a) 32 b) 16 c) 64 d)  e) none of these

59) Find the area of a right triangle with a leg having length 5 and the hypotenuse having length 13.

a) 32.5 b) 60 c) 30 d) 20 e) none of these

60) Find the area of an isosceles triangle with sides 10, 10, 16.

a) 48 b) 50 c) 96 d)  e) none of these

61. Area of square A. length times width

62. Area of rectangle B. side times side

63. Area of parallelogram C. 2 times length + 2 times width

64. Perimeter of square D. 4 times length of side

65. Perimeter of rectangle E. base times altitude

10m

2m

66. What is the area of the figure above?

67. What is the perimeter of the figure above?

9in

5in 4in

68. What is the area of the figure above?

69. What is the perimeter of the figure above?

10cm

4cm

6cm

70. What is the area of the figure above?

71. What is the perimeter of the figure above?

72. **What is the area of the shaded region?**

10m

2m

4m

2m

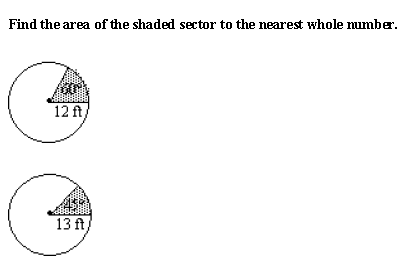
73. **What is the area of the shaded region?**

2cm

5cm

4cm

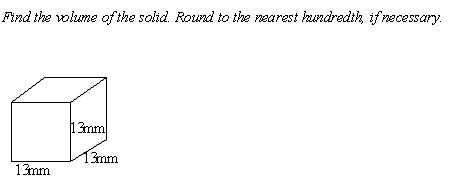
10cm

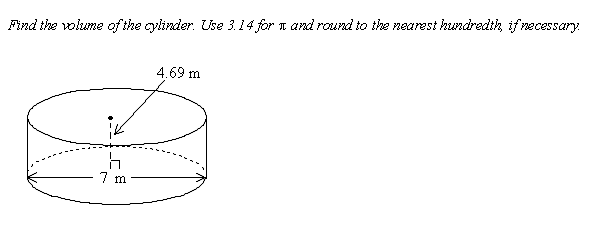


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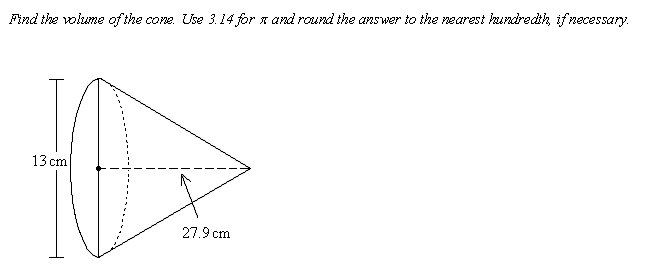
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**3D FIGURES**

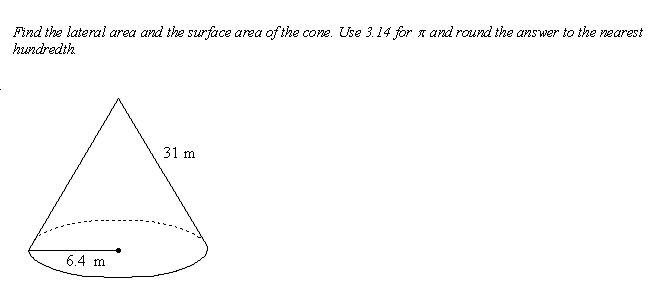
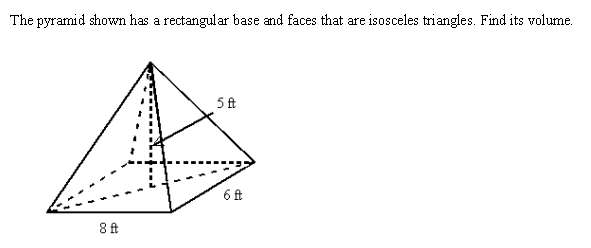
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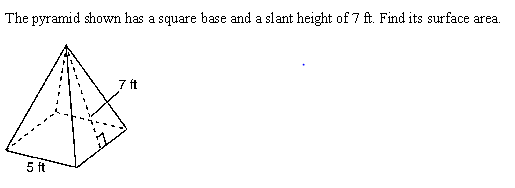
77.



78.

79.

80.



81.

82. Describe what happens to the volume of a cylinder if its radius is doubled while its height is halved.

The volume is\_\_\_\_\_\_\_\_\_\_\_\_\_.

83. For which length and width is the perimeter maximized for a figure with an area of 24 square units?

a. Length = 3, width = 8

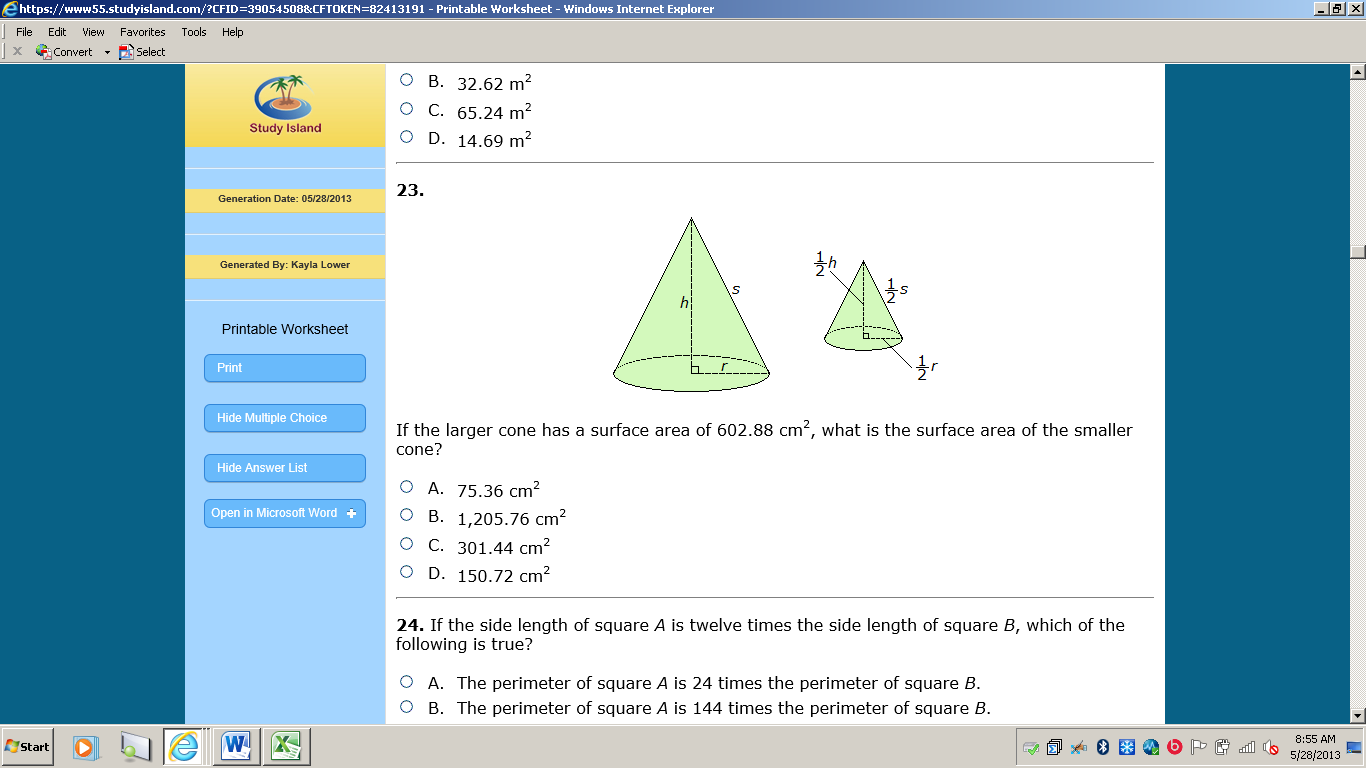
b. Length = 2, width = 12

c. Length = 1, width = 24

d. Length = 6, width = 4

84. To the nearest cubic foot, a cylindrical natural gas storage tank with a diameter of 10 feet holds 2260 cubic feet of gas.

To the nearest cubic foot, what is the approximate volume of an equally tall tank fi it has a diameter of 20 feet?



85. **COORDINATE GEOMETRY**

86. Find the distance between the points (1,-8) and (-7,-2).

87. Determine the coordinate of the midpoing of and find the approximate distance of GH for the poitns G(-6,-7) and H(3,6).

88. Find the slope of the line that passes through the points A (-1,5) and B (7,1)

89. Find the slope of a line perpendicular to the line containing the points (3,-7) and

(4,-3).

90. Tell whether the lines throguh the given points are parallel, perpendicular or neither. Explain.

Line 1: (2,2) and (-4,5)

Line 2: (4,-9) and (-6,-4)

91. Write an equation that is parallel to .

92. What is the slope of a line perpendicular to the line ?